

(A) preheating a composition comprising hydrogen fluoride and dichloromethane to form a vaporized and superheated composition;

(B) reacting the preheated composition of step (A) in the presence of a fluorination catalyst under conditions suitable to form a product stream comprising difluoromethane, chlorofluoromethane, hydrogen chloride, dichloromethane and hydrogen fluoride;

(C) recovering by distillation from the product stream of step (B) a high boiling fraction comprising hydrogen fluoride, dichloromethane, and chlorofluoromethane and a low boiling fraction comprising difluoromethane, hydrogen chloride, hydrogen fluoride, and reaction byproducts; and

(D) recovering substantially pure difluoromethane from the low boiling fraction of step (C)

wherein the hydrogen fluoride and the chlorofluoromethane are present in the product stream in a mole ratio of at least about 100:1.

Add the following new claims:

19. (New) The process of claim 9 wherein the hydrogen fluoride and the chlorofluoromethane are present in the product stream in a mole ratio of from about 25:1 to about 75:1.

20. (New) A process for the production of difluoromethane comprising:

(a) contacting dichloromethane with hydrogen fluoride in the presence of a fluorination catalyst to produce a product stream of difluoromethane, monochloromonofluoromethane, and unreacted starting materials and

(b) separating difluoromethane from the product stream from step (a) wherein sufficient hydrogen fluoride is employed in the process such that during step (b) the molar ratio of hydrogen fluoride to monochloromonofluoromethane is from about 25:1 to about 75:1.